

DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
WM. J. HARRIS, DIRECTOR

CENTRAL ELECTRIC LIGHT AND
POWER STATIONS
AND
STREET AND ELECTRIC RAILWAYS

WITH SUMMARY OF THE ELECTRICAL INDUSTRIES

1912



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LETTER OF TRANSMITTAL.

DEPARTMENT OF COMMERCE,
BUREAU OF THE CENSUS,
Washington, D. C., October 15, 1914.

SIR:

I have the honor to transmit herewith the report on the census of central electric light and power stations, and street and electric railways for 1912.

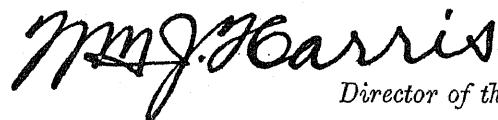
This is the second report on these industries that has been prepared in conformity with the requirements of the act of Congress of June 7, 1906. The canvass for the collection of these statistics was started early in April, 1913. It generally requires about a year to collect satisfactory reports from all establishments covered by a census of this character. The field work for this census, however, was completed by the middle of October, 1913. The results for each state were published as rapidly as the tabulations were finished, the first totals being made public in December, 1913. The United States totals were published in January and February, 1914. A preliminary bulletin was published during June, 1914, which presented the principal data in regard to each branch of the census in each state. The results were made public at an earlier date than they were published for preceding censuses. It was not thought essential, therefore, to hasten the publication of the final report transmitted herewith, and only a limited force was employed in its preparation.

The American Electric Railway Accountants' Association and the National Electric Light Association cooperated with the Bureau of the Census in devising the forms of the schedules used in the collection of these statistics. At prior censuses the office experienced considerable difficulty in securing complete reports from a number of companies. No difficulties of this character were encountered during the census of 1912, and I feel that this willingness on the part of the companies to furnish the information was due largely to securing their cooperation through their associations. Both the American Electric Railway Accountants' Association and the National Electric Light Association appointed committees to confer with the officials of the bureau, and meetings were held in the city of New York, where the form of schedule and method of presenting the statistics were discussed.

The statistics were collected and the report prepared under the supervision of Mr. William M. Steuart, chief statistician for manufactures. As at preceding censuses Mr. T. Commerford Martin, of New York City, was the consulting expert of the bureau and prepared that portion of the report dealing with the technical features of the central station and electric railways industries.

Acknowledgment should also be made of the services of Mr. Frank L. Sanford and Mr. Story B. Ladd, who assisted in the preparation of the text and analytical tables.

Respectfully,



Director of the Census.

To Hon. WILLIAM C. REDFIELD,
Secretary of Commerce.

SUMMARY OF THE ELECTRICAL INDUSTRIES.

GENERAL STATISTICS OF THE INDUSTRIES.

The group of electrical industries covered by the census of 1912 comprises five distinct industries designated as follows: (1) "Central electric light and power stations;" (2) "Street and electric railways;" (3) "Telephones;" (4) "Telegraphs;" and (5) "Municipal electric fire-alarm and police-patrol signaling systems." The industries resolve themselves into two groups of an allied character, light and power stations and railways constituting one group, and telephones, telegraphs, and fire-alarm and police-patrol signaling systems the other. The statistics for the first two industries are presented in this report, while the data for the last three are assembled in a separate report.

The following table is a summary of the leading statistics for the first four industries, separate and combined, for 1912, 1907, and 1902. It shows, for the several items and for each year, the per cent each industry forms of the total, and also gives percentages of increase in capitalization, income, expenses, and net income for the decade 1902-1912 and for each of the five-year periods within the decade.

Municipal electric fire-alarm and police-patrol signaling systems are not operated commercially, and the statistics relating thereto have little in common with the other four industries. They have therefore not been included in this combined summary.

THE ELECTRICAL INDUSTRIES:¹ 1912, 1907, AND 1902.

	Census.	Total.	Central electric light and power stations.	Street and electric railways.	Telephones.	Telegraphs (land and ocean).	PER CENT OF TOTAL.			
							Central electric light and power stations.	Street and electric railways.	Telephones.	Telegraphs.
Number of companies, stations, or systems	1912 1907 1902	8,424 7,612 7,789	5,221 4,714 3,620	1,260 1,236 987	1,916 1,636 1,157	27 26 25	62.0 61.9 46.5	15.0 16.2 12.7	22.7 21.5 40.5	0.3 0.3 0.3
Employees, salaries and wages:										
Average number.....	1912 1907 1902	582,452 428,765 277,474	79,335 47,632 30,326	282,461 221,429 140,769	183,361 131,670 78,752	37,295 28,034 27,627	13.6 11.1 10.9	48.5 51.6 50.7	31.5 30.7 28.4	6.4 6.5 10.0
Salaries and wages.....	1912 1907 1902	\$383,058,415 269,229,021 160,152,151	\$61,161,041 35,420,324 20,646,692	\$200,890,939 150,991,099 88,210,165	\$96,040,541 65,009,349 36,255,621	\$24,964,994 17,808,249 15,039,673	16.0 13.2 12.9	52.4 58.1 55.1	25.1 24.1 22.6	6.5 6.6 9.4
Capitalization.....	1912 1907 1902	\$3,101,927,332 5,850,101,507 3,324,000,034	\$2,175,678,266 1,096,913,622 504,740,352	\$4,708,568,141 3,774,772,096 2,308,282,099	\$991,204,115 758,122,214 348,031,058	\$226,386,810 220,293,575 162,946,525	26.9 18.7 15.2	58.1 64.5 60.4	12.2 13.0 10.5	2.8 3.8 4.9
Per cent of increase.....	1902-1912 1907-1912 1902-1907	143.7 38.5 76.0	331.0 98.3 117.3	104.0 24.7 63.5	184.8 30.8 117.8	38.9 2.8 35.2	----- ----- -----	----- ----- -----	----- ----- -----	----- ----- -----
Income.....	1912 1907 1902	\$1,201,168,106 830,827,566 463,982,821	\$302,115,599 175,642,338 85,700,605	\$579,208,430 426,900,952 250,526,642	\$255,081,234 176,700,408 86,825,536	\$64,782,843 51,593,868 40,930,038	25.2 21.1 18.5	48.2 51.4 54.0	21.2 21.3 18.7	5.4 6.2 8.8
Per cent of increase.....	1902-1912 1907-1912 1902-1907	158.9 44.6 79.0	252.5 72.0 104.9	131.2 35.7 70.4	103.8 44.4 103.5	58.2 25.5 26.0	----- ----- -----	----- ----- -----	----- ----- -----	----- ----- -----
Expenses—Total, including salaries and wages, interest, taxes, and fixed charges.	1912 1907 1902	\$994,336,021 669,665,102 366,764,240	\$234,419,478 134,196,911 68,081,375	\$497,782,682 358,113,401 202,570,060	\$203,754,909 135,475,177 65,164,771	\$58,378,952 41,879,613 30,948,034	23.6 20.0 18.6	50.1 53.5 55.2	20.5 20.2 17.8	5.9 6.3 8.4
Per cent of increase.....	1902-1912 1907-1912 1902-1907	171.1 48.5 82.6	244.3 74.7 97.1	145.7 39.0 78.8	212.6 60.4 107.9	88.6 39.4 35.3	----- ----- -----	----- ----- -----	----- ----- -----	----- ----- -----
Net income.....	1912 1907 1902	\$206,832,085 161,162,464 97,218,581	\$67,696,121 41,445,427 17,619,230	\$81,425,748 68,787,551 47,956,582	\$51,326,325 41,225,231 21,680,765	\$6,383,891 9,704,255 9,982,004	32.7 25.7 18.1	39.4 42.7 49.3	24.8 25.6 22.3	3.1 6.0 10.3
Per cent of increase ³	1902-1912 1907-1912 1902-1907	123.0 28.3 65.8	260.8 63.3 135.2	69.8 18.5 43.4	137.0 24.5 90.3	-36.0 -34.2 -2.8	----- ----- -----	----- ----- -----	----- ----- -----	----- ----- -----

¹ Not including municipal electric fire-alarm and police-patrol signaling systems.

² Exclusive of systems reporting an annual income of less than \$5,000.

³ Includes the Commercial Cable Company of Cuba in 1912 and 1907 (not reported in 1902).

⁴ Includes all systems operated primarily for revenue.

⁵ Cost of construction and equipment.

⁶ Six companies in 1907 and 30 companies in 1902 failed to furnish this information.

⁷ In addition, \$36,300,030 in 1912, \$20,093,302 in 1907, and \$7,703,574 in 1902, was reported by street and electric railway companies as income from sale of electric current for light and power or from sale of current to other public-service corporations.

⁸ A minus sign (—) denotes decrease.

The central electric light and power industry includes commercial and municipal central electric stations, but does not include a number of electric light and power stations operated in conjunction with electric railways, the statistics for which are included in the railway reports. The cost of construction and equipment is given in this table, in lieu of capitalization, on account of the inclusion of the municipal stations.

The street and electric railway industry covers both operating and nonoperating or lessor companies, but the nonoperating lessor companies did not report number and salaries of employees, so that the statistics pertaining to employees, salaries, and wages relate to operating companies only. The employees of the lessor companies are of the salaried class and comparatively few in number. All organization and maintenance expenses of the lessor companies are included under expenses. Cognizance has been taken of the rentals passing to the lessor companies from the operating companies for leased roads, and the duplication arising therefrom through the combination of income and expense accounts of both classes of companies has been eliminated.

The telephone statistics for 1912 and 1907 are confined to companies or systems having an annual income of \$5,000, whereas the statistics for 1902 cover all systems operated for revenue and include a large number of small organizations and rural lines. These minor systems, though numerous and affecting the statistics for employees, salaries, and wages, represent

a comparatively small part of the capitalization, income, and expenses for the telephone industry in 1902.

The proportions that light and power stations and railways, together, on the one hand, and telephones and telegraphs, on the other, form of the total capitalization, income, and expense are quite constant. The first group represented 85 per cent of the total capitalization in 1912, 73.4 per cent of the total income, and 74.7 per cent of the total expenses, as compared with 84.6 per cent, 72.5 per cent, and 75.5 per cent, respectively, in 1902. The percentages for the other group are, of course, the complements of these. In a general way the proportionate loss in one industry of a group has been counterbalanced by a gain in the other industry. Thus the proportion of the total capitalization represented by railways, which was 69.4 per cent in 1902, decreased to 58.1 per cent in 1912, but the proportion for light and power stations increased from 15.2 per cent to 26.9 per cent. Likewise the telegraph systems show a decrease in the proportion their capitalization forms of the total capitalization, namely—from 4.9 per cent in 1902 to 2.8 per cent in 1912—and telephones an increase from 10.5 per cent to 12.2 per cent. The same holds for income and expenses. The returns for electric railways show a marked diminution in the number of companies which generate their power. The generation of current for light and power is becoming more and more a distinct industry, and the growth of the telephone has been in part at the expense of the telegraph.